

Patent Abstracts of Japan

PUBLICATION NUMBER : 10096077
PUBLICATION DATE : 14-04-98

APPLICATION DATE : 24-09-96
APPLICATION NUMBER : 08251671

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INT.CL. : C23C 14/14 C22C 45/08 C23C 14/30

TITLE : FUNCTIONALLY GRADIENT THIN COATING AND ITS PRODUCTION

ABSTRACT : PROBLEM TO BE SOLVED: To provide a thin coating having a gradient function.

SOLUTION: This is a thin coating with ≥ 0.1 mm thickness composed of Al (the main element) and M (the elements to be added) [where M denotes one or more kinds of elements selected from Cr, Mn, Fe, Co, Ni, Cu, Ti, Zr, Y, rare earth elements and Mm (misch metal)], in which, as for the compsn. in the coating thickness direction, the ratio of M to Al continuously increases toward the coating surface, and the hardness of the coating surface is regulated to the value of > 360 DPN. Moreover, as for the method for producing the same, a crucible is charged with a prescribed amt. of the homogeneous material having the aforesaid compsn. by the total content, which is deposited on a substrate by an electron beam depositing method to execute coating formation.

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